THE IMPLEMENTATION AND EFFECTIVENESS OF ADVANCED CLINIC ACCESS

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A new HSR&D center:

This is the last evaluation report that will be issued by the HSR&D Management Decision and Research Center (MDRC). On June 1, 2004, MDRC researchers assumed new roles in the recently awarded Center for Organization, Leadership and Management Research (COLMR), a VA HSR&D Center of Excellence. COLMR is unique among HSR&D Centers of Excellence in focusing on organization, leadership and management research and in partnering with four VISNs (1, 10, 22 and 23), the National Center for Organization Development and the Management Support Office to carry out its mission.

THE IMPLEMENTATION AND EFFECTIVENESS OF ADVANCED CLINIC ACCESS: EXECUTIVE SUMMARY

In 2000, VA launched a national initiative to diffuse Advanced Clinic Access (ACA) in six target clinic areas (Primary Care, Audiology, Eye Care, Cardiology, Orthopedics, Urology) across VA. ACA is a set of 10 key change principles for managing clinics so that veterans have access to medical care when they want it. The principles are: (1) work down the backlog, (2) reduce demand, (3) understand supply and demand, (4) reduce appointment types, (5) plan for contingencies, (6) manage the constraint, (7) optimize the care team, (8) synchronize patient, provider and information, (9) predict and anticipate patient needs at the time of appointment, and (10) optimize rooms and equipment.

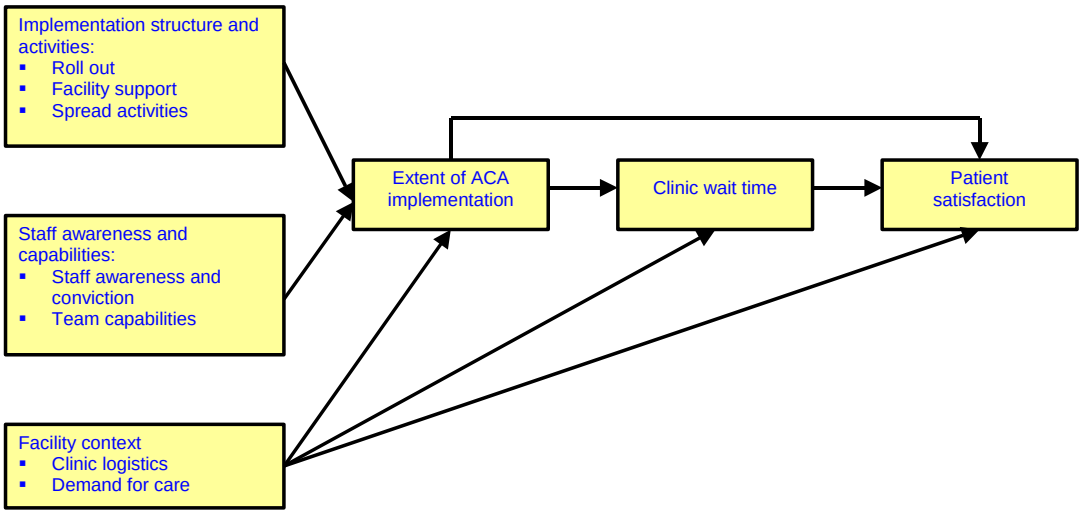
To encourage and support the diffusion of these principles, the ACA initiative built an extensive infrastructure that includes: a national steering committee; a full-time national clinical director; a person designated to lead ACA in every VISN and most medical centers (called points of contact or POCs); and a network of clinical access coaches to catalyze peer networks of advocacy and support. The infrastructure, based on a spread model emphasizing information, communication and social networks, supports a growing network of training, information exchange, coaching and collaboration to clinical staff in VA medical centers.

An important component of the ACA initiative was a comprehensive evaluation of the implementation and effectiveness of ACA. The chair of the ACA Steering Committee contracted with the HSR&D Management Decision and Research Center (MDRC) to conduct the evaluation. This summary highlights the key evaluation findings.

A Model of Implementation and Effectiveness

The evaluation was guided by the conceptual model illustrated in Exhibit A. According to this model, the organizational structure and the particular activities used to introduce and then spread ACA will influence the extent to which ACA is implemented – or, put into practice -- in a clinic area or across a medical center. However, these implementation structures and activities will not be the only determinants

Exhibit A
The Implementation and Effectiveness of Advanced Clinic Access: Evaluation Model



of ACA implementation. Certain aspects of facility context and the awareness and capabilities of individuals responsible for implementing ACA will also influence implementation. The extent to which ACA is implemented will in turn affect wait time – defined as time to next appointment -- and ultimately affect patients' satisfaction with their access to care. Finally, facility context will have an impact on both wait time and satisfaction.

Evaluation Design

The evaluation was designed to describe the approaches used to promote and support implementation of ACA, to measure the extent to which ACA was implemented in the six target clinic areas and to analyze the factors associated with ACA implementation and with wait times and patient satisfaction.

Taking advantage of the naturally occurring variation in wait times, we selected for study a sample of 78 VA medical centers stratified by wait time and size. Measures of the key variables in the conceptual model were drawn from data obtained by: (1) structured telephone interviews with facility ACA points of contact (POCs) conducted between January and April 2003; (2) reports by POCs of ACA implementation collected between February and May 2003; (3) a mail survey completed by 3870 staff (42% response) in July and August 2003; (4) VA administrative databases; and (5) VA patient satisfaction databases.

Highlights

In the context of high attention to wait times and an extensive network of activities to promote and support ACA, the MDRC evaluation found that efforts to spread ACA had resulted in strong progress in many areas by the summer of 2003, though the story was still mixed. This variation is to be expected given the scope and complexity of change attempted, particularly when attempted without a national mandate. In the full evaluation report, we present detailed information about each dimension of the conceptual model and the relationships among dimensions. In this summary we highlight the evaluation findings in four areas:

1. **Awareness of wait time as a problem was higher than awareness of ACA as a potential solution, at the time of the ACA staff survey in the summer of 2003.**

Why important: The opinions, knowledge and capabilities of the clinicians and other staff responsible for implementing a new clinical practice influence that implementation in many ways. The clinic staff are the filter through which the implementation structures and activities pass. They are the people who actually put the innovation into practice. Organizational change is more likely to be successful if staff hold two views. First, they must recognize that there is a need and an urgency to change the way they work, and, second, they must believe that the proposed approach to meeting that need will be effective – that it will have the expected benefits and that it will work in their organization.

Findings: At the time of the ACA staff survey in the summer of 2003, awareness of wait time as a problem was higher than awareness of ACA as a potential solution. Averaged across the six target clinic areas:

- More than three-quarters of the staff surveyed believed that reducing wait times was very important (77% to 93% by target clinic area).
- Roughly half the staff surveyed believed ACA to be an effective strategy for reducing wait times (44% to 59% by target clinic area).
- At the same time, many staff did not recognize the term Advanced Clinic Access before reading the survey (23% to 55% first heard the term when they read the survey, by target clinic area).

Implications: While awareness of ACA and its benefits may have increased since last summer, there is likely to be a need for continuing efforts to educate staff, including clinicians, about ACA.

2. Implementation of ACA was well underway but varied across facilities and target clinic areas by the spring and summer of 2003.

Why important: Determining whether an innovative clinical practice is actually put into practice is a key step in assessing its effectiveness. Many innovative clinical practices have disappointing results, often not because the innovation design failed but because the innovation was never implemented. In this analysis of ACA, we used the presence of the 10 key change principles as the indicator of the extent to which ACA was implemented. We measured implementation from two perspectives, that of the facility POCs in the spring of 2003 and the clinic staff in the summer of 2003.

Findings: By the spring and summer of 2003, implementation of ACA was underway but varied across facilities and target clinic areas:

- Looking at each target clinic area, ACA was fully implemented in 90%-100% of the clinics in a substantial proportion of facilities (32% to 42%), according to POC reports. Full implementation in the other facilities ranged widely from 0-90% in all target clinic areas.
- Clinic staff reported that the 10 key change principles generally were moderately implemented but with substantial variation among target clinic areas. Staff in Audiology on average reported higher implementation than other clinic areas, with 39% of respondents rating implementation between 4 and 5 on a five-point scale with 5 being "to a great extent." Staff in Orthopedics and Cardiology reported the lowest implementation with 39% and 46%, respectively, rating implementation below 2.5 with 3 being "moderate."
- Across clinic areas, the key change principles most likely to be fully implemented were:
    - Understanding supply and demand;
    - Synchronizing patient, provider and information;
    - Optimizing rooms and equipment.

Implications: While we expect the levels of ACA implementation have risen since last summer given the expanding levels of ACA diffusion, we would not expect full implementation in all clinics in all clinic areas across VA. Periodic monitoring of the implementation of the 10 key changes, not only in the original six target clinics but in the additional clinics receiving attention in FY2004, would provide important information for targeting education and technical assistance to areas where implementation is lagging.

3. Four variables emerged as significant predictors of ACA implementation in three or more of the six target clinic areas:

- **Greater length of time doing ACA;**
- **Greater management support;**
- **Clinic staff review performance data;**
- **Clinic teams have the knowledge and skill needed to do their work well and make changes successfully.**

Why important: Identifying factors associated with successful implementation provides useful lessons for future diffusion of ACA and potentially for the diffusion of other innovative clinical practices.

Regression methods: To identify the factors most strongly affecting ACA implementation, we conducted a series of multiple regression analyses. Our first step was to run separate regressions within the three domains of the conceptual model that we expected to influence implementation: (1) implementation structure and activities, (2) staff awareness and capabilities, and (3) facility context. This was done separately for each of the six clinic areas. We then created a consolidated regression model for each clinic area by combining the variables from each domain that were identified as significant in step 1. The results of that consolidated regression analysis are shown in Exhibit B.

Findings: Three findings are noteworthy.

First, the models do well in predicting variation in ACA implementation, meaning that we have a fairly good understanding of the factors that make a difference in implementing ACA. As indicated by the adjusted R^2 values in Exhibit B, the proportion of variance accounted for by the factors, or variables, in

Exhibit B
Factors Significantly Associated with Extent of ACA Implementation
▲ Positive association / ▼ Negative association

	Primary Care	Audiology	Cardiology	Eye Care	Orthopedics	Urology
Implementation structure & activities						
• Time doing ACA				▲	▲	▲
• Management support for ACA	▲		▲		▲	
• Review of performance data		▲		▲		▲
• Local colleagues participate in access road show, consultations			▼			
• Availability of ACA resource materials					▲	▲
Staff awareness and operations						
• Team has needed knowledge and skills	▲		▲	▲	▲	
Facility context						
• Patients on waiting list	▲				▲	
• Exam rooms per clinician	▲					▲
• Use of consulting physicians		▲			▲	
Adjusted R^2	35%	34%	22%	21%	42%	39%

the theoretical model ranged from 21% to 42%. This would generally be regarded as moderate to strong predictive power for the social sciences.

Second, no single set of variables emerged as significant predictors across all six target clinic areas. The profile of significant factors differed from clinic area to clinic area. All but one of the factors was positively related to ACA implementation, meaning that the greater the presence of that factor, the greater the degree of ACA implementation. The exception was in Cardiology where greater participation of local colleagues in access road shows was associated with less ACA implementation.

Third, despite this variation between clinic areas, four variables emerged as significant predictors of ACA implementation in three or more of the six clinic areas:

- *Greater length of time doing ACA*

The significant positive relationship between length of time doing ACA – measured in months since ACA was initiated in a clinic area in a facility -- and the extent of implementation in three specialty clinics reinforces the expectation that change takes time, especially in a complicated intervention such as ACA. At the same time, the lack of significance in Primary Care suggests that the relationship may only hold for a limited period, or at least that it is strongest in the early phases of implementation. ACA generally was introduced earlier in Primary Care than in specialty clinics. Within Primary Care, ACA began in 1999 or earlier in 43% of the facilities, whereas in other clinic areas this was true in only 8%-18% of the facilities. This suggests, then, that at a more mature stage of an intervention, such as achieved in Primary Care, additional time and experience in themselves do not contribute to substantially higher levels of implementation.

- *Greater management support for ACA*

Leadership support for an innovation is generally seen as an important ingredient in its success. In our analyses, we looked beyond the personal commitment and advocacy of leaders to examine the management structures and processes that were put into place to support ACA. To analyze management support, we created a summary score from POC responses to an interview question about which of the following management structures and activities had been used to encourage ACA at their facility:

  - Local POC designated to coordinate and champion ACA;
  - ACA measures integrated into facility performance measures and strategic plans;
  - Managers regularly review and are held accountable for ACA performance measures;
  - Facility operations and infrastructure improved to support ACA;
  - Local ACA champions explicitly designated for clinic areas;
  - Local financial resources used to support ACA directly;
  - Facility has ACA oversight body.

Higher scores – indicating that more aspects of management support were present – were significantly associated with greater ACA implementation. The picture of effective management support for ACA that emerges from these data involves elevating the visibility of ACA, incorporating ACA in facility priorities, holding managers accountable for improvement-related performance, and targeting resources to remove obstacles to ACA implementation that are beyond the reach of the local departments.

- *Clinic staff review ACA performance data*

The significant relationship between review of performance data and ACA implementation is consistent with the literature showing the use of data and performance feedback to be effective strategies for changing clinical practice, especially among physicians. In the staff survey, we asked respondents to rate the helpfulness of a wide array of ACA educational and implementation strategies, including review of performance data, on a 5-point scale ranging from “not at all helpful” to “extremely helpful.”

In the regression analysis, review of performance data was the strategy that had the strongest association with ACA implementation across target clinic areas. This finding illustrates the quality improvement principle that in order to change a process or outcome, one must be able to measure it. In this instance, having trustworthy and timely wait time data – and providing the data to clinic teams providing care -- made it possible to assess the current level of the problem and to monitor the impact of improvement efforts.

- *Clinic teams have the knowledge and skill needed to do their work well and make changes successfully*

While staff opinions about an innovation will influence its implementation, as we argued earlier, awareness and conviction alone will not ensure success. The clinic team must also have the knowledge and skill needed to make changes and implement the new clinical practices. In our analyses, team knowledge and skill was a multi-item scale based on responses to eight items in the staff survey regarding the experience of clinic staff as they worked together to implement ACA. These items, which used a 5-point response scale ranging from “strongly disagree” to “strongly agree,” covered a variety of issues related to team learning and use of information:

  - Our team learns from the efforts of others to implement ACA in our facility;
  - Our team was able to easily adapt ACA ideas to match the needs of our clinic area;
  - Our team effectively applies knowledge and skill to get our work done well;
  - Our team has used performance data effectively to design and test changes;
  - Our team gets all the information we need to do our work;
  - Our team has identified measures that are tracked on a regular basis to assess our progress;
  - After we have implemented a change, team members think about and learn from the results;
  - This organization makes sure people have the skills and knowledge to work as a team.

Higher scores on this scale were significantly associated with greater ACA implementation. This suggests that teams with these characteristics are more likely to be effective in putting ACA into practice. The picture of the more effective team that emerges from these data is the one that seeks information, and is familiar with and utilizes some form of "plan-do-study-act" method of process improvement, although team members may not necessarily know it by that name. Measurement and data are very important to these improvement methods, and the team both makes effective use of available data (e.g., on wait time) and/or implements new measures as necessary to monitor the impact of process changes.

Implications: These findings about key factors in successful implementation of ACA offer important lessons for VA managers and clinical leaders who are striving to diffuse effective new clinical practices successfully, and to VISN leaders who are working to transform their VISNs into learning organizations that can efficiently implement evidence-based practices.

4. ACA was associated with improved patient access and satisfaction in some but not all areas:

- **Greater ACA implementation was significantly associated with shorter wait times in three clinic areas (Primary Care, Urology, Orthopedics).**
- **Shorter wait time was significantly associated with higher patient satisfaction in Primary Care on four measures (Ability to get care as soon as wanted (Qx3); visit coordination, courtesy and pharmacy service scales.**
- **In contrast, greater ACA implementation in Primary Care was directly associated with lower patient satisfaction on one measure (Specialty care).**

Why important: The guiding expectation behind the implementation of ACA is that it will improve patients' access to care. It is expected that clinics with greater ACA implementation will be more likely to offer better access – with access measured by short wait times – than clinics that do not adopt ACA principles, and that in turn veterans would be more satisfied with access at the former facilities than the latter.

Moreover, ACA is an approach for clinic redesign that is intended to affect aspects of patient satisfaction in addition to or instead of the impact resulting from reductions in wait time. While we expect these other effects to be positive, we need to examine the relationships carefully to check for unintended negative consequences of ACA implementation.

Regression methods: To test these expectations, we conducted a series of multiple regression analyses of (1) the relationship between ACA implementation and wait time; (2) the relationship between wait time and patient satisfaction; and (3) the relationship between ACA implementation and patient satisfaction. In all analyses, we first controlled for potentially confounding facility context factors. The measures in these prediction models included:

Extent of ACA implementation was measured as a composite score for each target clinic area based on data from the POC reports in spring 2003 and the staff survey administered in summer 2003.

Wait time was defined as the average number of days to the next available appointment in March 2003, as reported by the VISN Service Support Center (VSSC), and was likewise available for each of the six target clinics. In the first set of analyses, where wait time was the outcome variable, we used it as a continuous variable. In the remaining analyses, where wait time was a predictor and the analyses only included Primary Care, we divided facilities in three groups based on average wait time for Primary Care: the 20 percent of facilities with the shortest average wait time, the 20 percent of facilities with the longest average wait time, and the remaining 60 percent in the middle of the wait time distribution.

Patient satisfaction was measured using data from the VA Survey of the Health Experiences of Patients (SHEP) – specifically, data for those survey respondents who had made a Primary Care visit during March 2003. We limited the patient satisfaction analysis to those respondents who had only made a Primary Care visit so as to minimize possible contamination of survey responses by experiences in other clinical areas. We conducted separate analyses for the item specifically addressing satisfaction with wait time (Qx3: "Were you able to get an appointment as soon as you wanted?") and the nine routinely-computed multi-item scales: access, patient preferences, patient

education, emotional support, visit coordination, overall coordination, courtesy, pharmacy service, and specialty care.

Facility context was measured by six variables: four clinic logistics variables as reported by the POCs -- clinic area staff size, number of exam rooms per clinician, number of support staff per clinician, facility use of consulting physicians – and two demand variables drawn from VHA administrative databases – new patient inflow and number of patients on electronic wait lists. The particular context variables used in each regression model varied by the size of correlation between the variable and the dependent measure in that equation.

Findings: Our expectations that ACA would be associated with improved patient access and satisfaction were confirmed in some but not all areas. Looking at each set of associations in more detail:

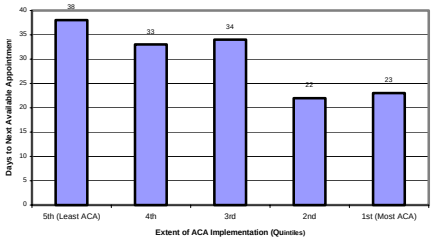
- *ACA implementation and wait time*

The most direct effect expected of ACA, and the one most closely monitored by senior leaders in VA, was shorter wait time for a clinic appointment. After controlling for facility context variables, we found that greater implementation of ACA was significantly associated with shorter wait times in three clinic areas: Primary Care, where ACA accounted for 7% of the variation in wait time; Urology, where it accounted for 5% of the variation; and Orthopedics, where it accounted for 14% of the variation. Using social science standards for effect sizes -- where 2% of variance explained is considered small and 13% is considered medium -- the analyses for Primary Care and Urology indicate a modest effect of ACA, while those for Orthopedics indicate a stronger, moderate effect of ACA on wait time. Our analyses did not show a significant relationship yet between ACA and wait time in the other clinic areas.

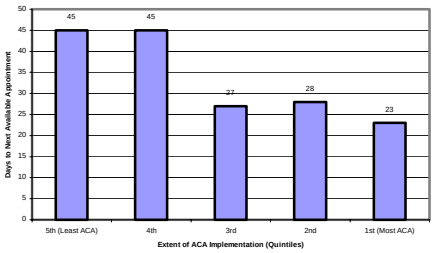
The relationships between ACA and wait time for the three clinics with significant results are illustrated in Exhibit C. The graphs show for each clinic area the average wait time in five groups of facilities based on extent of ACA implementation. In each clinic area, those facilities with the least ACA implementation (shown in the far left bar) had higher average wait times than those facilities where ACA was more fully implemented (shown in the far right bar). In Urology, the relationship is gradual, or roughly linear. For Primary Care and Orthopedics, there appears to be an abrupt change, or a threshold, suggesting that ACA implementation needs to reach a point of critical mass before it has an effect on wait time. In Primary Care, the threshold was at the second quintile, where POCs on average rated full implementation of the 10 key changes at 78% or higher and staff rated implementation at 3 or higher (on a 5-point scale). In Orthopedics, the threshold was lower, at the third quintile, where POCs rated full implementation at 60% or higher and staff rated it at 2.5 or greater, suggesting that fewer elements of ACA had to be in place before it had an effect on wait time.

Exhibit C
Wait Time Stratified by Extent of ACA Implementation

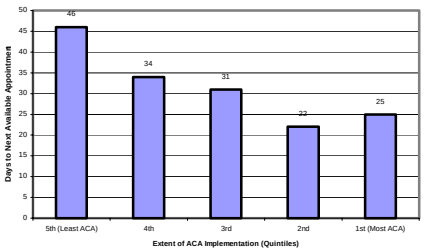
Primary Care



Orthopedics



Urology

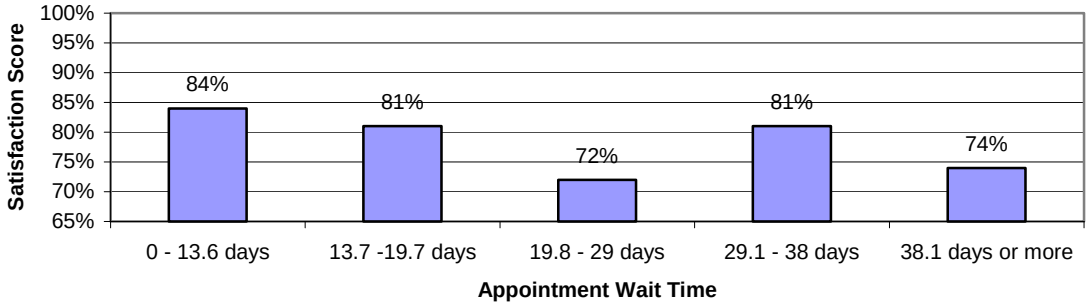


- *Clinic wait time and patient satisfaction*

Ultimately, we expect shorter wait time to lead to higher patient satisfaction with access and, potentially, with other aspects of their care. In analyzing this relationship in Primary Care, again after controlling for facility context variables, we found wait time significantly related to satisfaction in regression models for four satisfaction measures: ability to get care as soon as wanted (Qx3), and the visit coordination, courtesy and pharmacy service scales. The percent of variance accounted for by the facility context variables in these four models ranged from 5% (courtesy) to 11% (Qx3). The percent of remaining variance in patient satisfaction accounted for by appointment wait time ranged from about 6% (Qx3) to 11% (pharmacy service).

The significant relationship between wait time and Qx3 is illustrated in Exhibit D. The graph divides facilities into groups (quintiles) based on their average appointment wait time and reports the percent of veterans in each group who answered "yes" in response to Qx3. In general, there were more "yes" responses at facilities with shorter appointment wait times than there were at facilities with longer appointment wait times. In the shortest wait time group, where the average appointment wait was 13.6 days or less, 84 percent of veterans said that they had received their appointment as soon as they had wanted it. This compares to only 74 percent "yes" among those at facilities with the longest wait times (38.1 days or more).

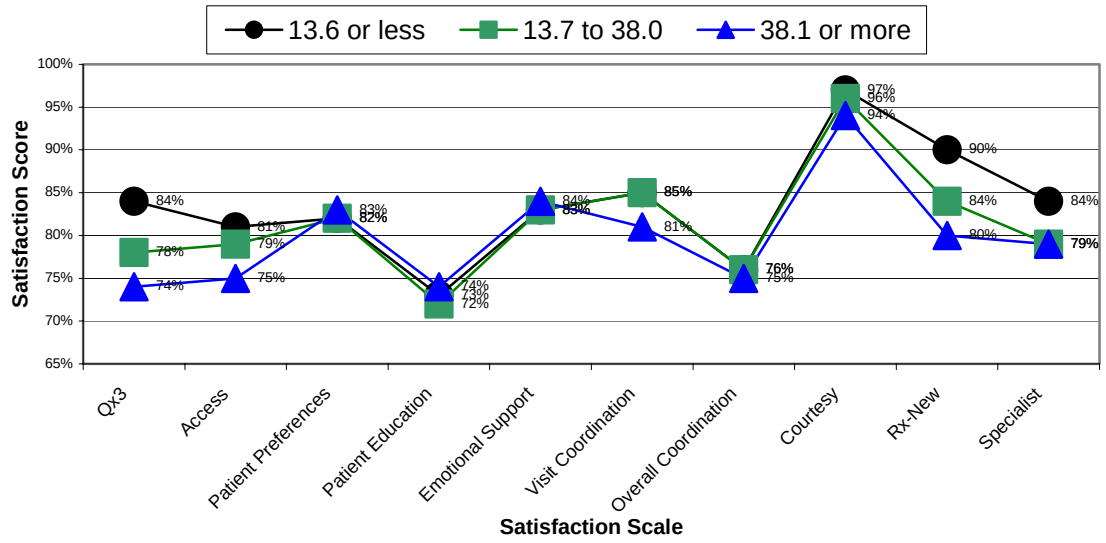
Exhibit D
"Were you able to get an appointment as soon as you wanted?"
Percent "Yes" Stratified by Appointment Wait Time



The relationship between wait time and Qx3 was not entirely linear, however. At facilities where the average appointment wait ranged between 29.1 and 38 days, 81 percent of veterans answered "yes" to Qx3 in comparison to only 72 percent in the middle wait group and 74 percent "yes" in the longest wait time group. No immediate reason for the relatively favorable attitude toward the relatively long wait times in this group of facilities was evident. We hypothesized that those facilities might have notably higher proportions of patients making return visits, where the longer time interval was desirable. However, that interpretation was not supported. Using data on patient self-reported reason for visit, our analyses showed that the number of people making return visits as opposed to acute care visits was roughly the same in each of the wait time groups.

The significant relationships between wait time and veterans' satisfaction with ability to get an appointment (Qx3), visit coordination, courtesy and pharmacy service are illustrated in Exhibit E. This graph reports the satisfaction profile of veterans at three groups of facilities: those with short average Primary Care wait time (13.6 days or less, as indicated by circles), those with moderately long wait time (between 13.7 and 38.0 days, as indicated by squares), and those with the longest wait times (38.1 days or more, as indicated by triangles). Using the middle wait time group as a reference point, one can see that the satisfaction levels for visit coordination, courtesy and pharmacy service are either higher in the short wait time group, lower in the long wait time group, or both.

Exhibit E
Patient Satisfaction Scores Stratified by Appointment Wait Time



- *ACA and patient satisfaction*

To test the premise that ACA is an approach to clinic redesign that may affect aspects of patient satisfaction in addition to or instead of the impact resulting from reductions in wait time, we analyzed for each of the 10 patient satisfaction measures the percent of variance in satisfaction that was explained by ACA implementation in Primary Care after the effects of facility context *and* wait time were taken into account.

Only one regression model produced a significant result, that for specialty care. After controlling for facility context and wait time, ACA implementation added a significant 5.7% to the variance accounted for in specialty care satisfaction. However, the relationship was negative, indicating that greater ACA implementation was associated with lower satisfaction with specialty care. The specialty care satisfaction scale includes items on both access to specialty care and the quality of care.

One possible explanation for the negative relationship is the restricted sample used in this analysis. We limited the analysis to respondents who had only a Primary Care visit on the date referenced in the survey (as described on page vi). It may be that these respondents were healthier and less familiar with specialty care than other VA users. Another possible explanation is that veterans may believe that the use of referral guidelines, or service agreements, in ACA limits their access to specialists. Service agreements serve multiple ACA principles with regard to specialty care, including the reduction of demand and managing constraints through the appropriate use of scare resources. These agreements often attempt to define more precisely the circumstances that warrant specialty care referral and thereby encourage Primary Care physicians to assume responsibility for more of their patients' care. The reciprocal issue of graduating patients from specialty care back to Primary Care is also often explicitly addressed by the agreements. The introduction and/or more consistent application of such referral guidelines might be perceived by veterans as a limitation of access to specialty care, and this could manifest itself as lower satisfaction scores on the specialty care section of the SHEP survey.

Implications: Analyses of the relationships between ACA implementation, wait time and veterans' satisfaction as of March 2003 showed significant results in some areas but not others. The finding that greater implementation of ACA in Primary Care, Orthopedics and Urology is associated with shorter wait times confirms the expectation that use of ACA principles can contribute to the reduction of appointment wait time. Our analyses did not show significant relationships between ACA and wait time in the other clinic areas, perhaps because their work on ACA was still fairly new at the time analyzed. These relationships should continue to be tracked.

In addition, the threshold in the relationship between implementation and wait time in Primary Care and Orthopedics indicates that, at least in some clinic areas, ACA implementation had to reach a critical mass before it affected wait times substantially. This suggests that it is not enough to introduce one or two key changes by themselves, but that the value of ACA comes from the clinic redesign associated with the implementation of a larger set of the 10 key changes.

As hypothesized, shorter wait times in Primary Care were significantly related to patients' higher satisfaction with their ability to get an appointment when wanted (Qx3). One unexpected finding that deserves further exploration was high satisfaction in facilities with average wait times in the middle of the range (between 29.1 and 38 days). The finding that shorter wait time was also significantly related to veterans' satisfaction with coordination of care, courtesy and pharmacy service provides preliminary evidence that ACA is having an impact on clinic redesign beyond reduction in wait time.

In exploring the possibility of a direct impact of ACA on aspects of care other than wait time, we found only one significant factor, satisfaction with specialty care. In this case the relationship was negative indicating that greater ACA implementation was associated with lower satisfaction with specialty care. The finding may simply reflect the unique characteristics of the subsample used in this analysis. Alternatively, it may signal an unintended consequence of service agreements: that the greater control over access to specialty care brought about through the use of service agreements may be experienced as a restriction by veterans and could lead to lower satisfaction with that aspect of their care. This interpretation is speculative, but the relationship warrants further investigation.